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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,028	09/11/2003	David M. Pepper	B-4077 618504-4	6773
36716	7590	11/20/2006	EXAMINER	
LADAS & PARRY 5670 WILSHIRE BOULEVARD, SUITE 2100 LOS ANGELES, CA 90036-5679			THOMAS, BRANDI N	
			ART UNIT	PAPER NUMBER
			2873	

DATE MAILED: 11/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/661,028

Applicant(s)

PEPPER ET AL.

Examiner

Brandi N. Thomas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 3,4,8,12-21 and 27-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7,9-11 and 22-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☒ Other: Detailed Action.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 5-7, 9-11, and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Claydon et al. (2004/0126050 A1) in view of Ibsen et al. (7085492 B2).

Regarding claims 1 and 22, Claydon et al. discloses, in figure 14, an optical retro-reflective apparatus with modulation capability comprising: a retro-reflecting Fabry-Perot structure (164) including a pair of reflective surfaces (310, 312, and 314) (section 0041); and a micromechanical device (electrostatic actuator) for moving at least one of the reflective surfaces (310) of said pair of reflective surfaces (310, 312, and 314) but does not specifically disclose a micromechanical device for moving at least one of the reflective surfaces of said pair of reflective surfaces relative to another one of the reflective surfaces of said pair of reflective relative surfaces a distance which causes the pair of the reflective surfaces to switch between a reflective mode of operation and a transmissive mode of operation. Ibsen et al. discloses, in figures 14A and 14B, a micromechanical device (1116) for moving at least one of the reflective surfaces (1118) of said pair of reflective surfaces relative to another one of the reflective surfaces of said pair of reflective relative surfaces a distance which causes the pair of the reflective surfaces to switch between a reflective mode of operation and a transmissive mode of operation

(col. 14, lines 23-34). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Claydon et al. with the switching device of Ibsen et al. for the purpose of reflecting light back along its incident path and reflecting the deflected light along a different path from the incident light (col. 14, lines 23-34).

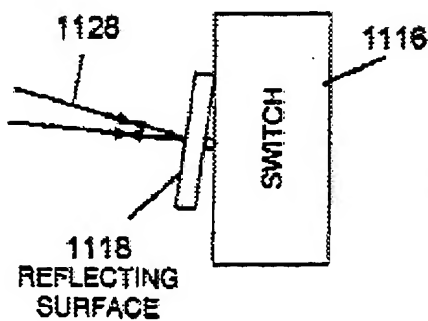


FIG. 14A

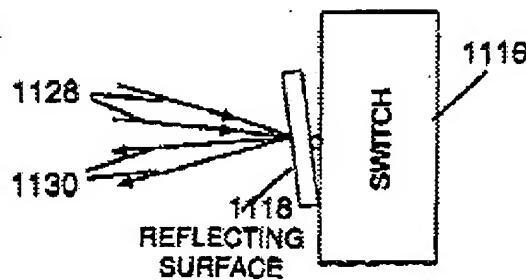
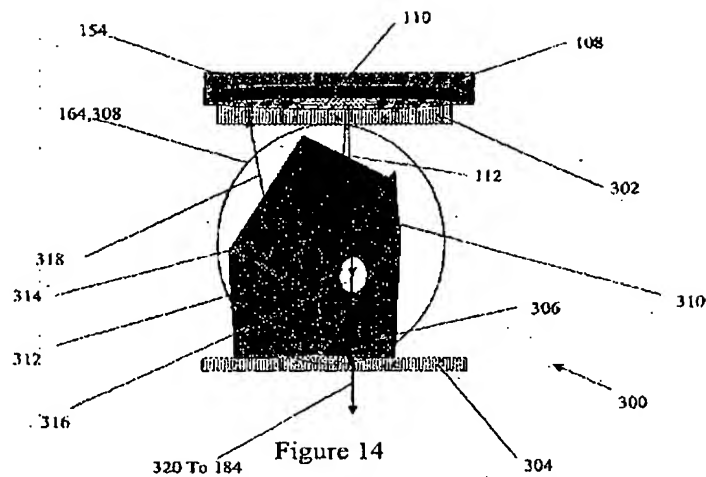


FIG. 14B

Regarding claim 2, Claydon et al. discloses, in figure 14, an optical retro-reflective apparatus with modulation capability, wherein the retro-reflecting structure includes a corner cube arrangement (306) with the pair of reflective surfaces (310, 312, and 314) forming at least one angled reflecting surface (310) of the corner cube arrangement (306) and another reflecting surface (312) forming another angled reflecting surface of the corner cube arrangement (306) (section 0041).



Regarding claim 5, Claydon et al. discloses, in figure 14, an optical retro-reflective apparatus with modulation capability, wherein the micromechanical device is a MEM device made using photolithographic techniques (section 0043).

Regarding claim 6, Claydon et al. discloses, in figure 14, an optical retro-reflective apparatus for modulating an optical beam, the apparatus comprising: a retro-reflecting structure (164) including a substrate (304); and a micromechanical device (electrostatic actuator) for moving at least one of the reflective surfaces (310) of said pair of reflective surfaces (310, 312, and 314) but does not specifically disclose a moveable grating structure and a micromechanical device for moving at least one of the reflective surfaces of said pair of reflective surfaces relative to another one of the reflective surfaces of said pair of reflective relative surfaces a distance which causes the pair of the reflective surfaces to switch between a reflective mode of operation and a transmissive mode of operation. Ibsen et al. discloses, in figures 14A, 14B, and 16, a moveable grating structure (214 and 216) (col. 14, lines 53-55); and a micromechanical device (1116) for moving at least one of the reflective surfaces (1118) of said pair of reflective surfaces relative to another one of the reflective surfaces of said pair of reflective relative surfaces a

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distance which causes the pair of the reflective surfaces to switch between a reflective mode of operation and a transmissive mode of operation (col. 14, lines 23-34). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Claydon et al. with the switching device of Ibsen et al. for the purpose of reflecting light back along its incident path and reflecting the deflected light along a different path from the incident light (col. 14, lines 23-34).

Regarding claim 7, Claydon et al. discloses, in figure 14, an optical retro-reflective apparatus with modulation capability, wherein the retro-reflecting structure includes a corner cube arrangement (306) with the pair of reflective surfaces (310, 312, and 314) forming at least one angled reflecting surface (310) of the corner cube arrangement (306) and another reflecting surface (312) forming another angled reflecting surface of the corner cube arrangement (306) (section 0041) but does not specifically disclose a moveable grating structure. Ibsen et al. discloses, in figure 16, a moveable grating structure (214 and 216) (col. 14, lines 53-55). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Claydon et al. with the grating of Ibsen et al. for the purpose of dispersing light (col. 14, lines 53-55).

Regarding claim 9, Claydon et al. discloses, in figure 14, an optical retro-reflective apparatus with modulation capability including a corner cube (306) having reflecting surfaces (310, 312, and 314) but does not specifically disclose a plurality of moveable grating structures. Ibsen et al. discloses, in figure 16, a plurality moveable grating structure (214 and 216) (col. 14, lines 53-55). Therefore it would have been obvious to one having ordinary skill in the art at the

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time the invention was made to combine the device of Claydon et al. with the grating of Ibsen et al. for the purpose of dispersing light (col. 14, lines 53-55).

Regarding claim 10, Claydon et al. discloses the claimed invention but does not specifically disclose wherein the gratings of one moveable grating structure of said plurality of moveable grating structures is rotated about a central axis thereof related to neighboring moveable grating structures. Ibsen et al. discloses wherein the gratings of one moveable grating structure (214) of said plurality of moveable grating structures (214 and 216) is rotated about a central axis thereof related to neighboring moveable grating structures (col. 7, lines 17-24). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Claydon et al. with the grating structure of Ibsen et al. for the purpose of dispersing light (col. 7, lines 17-24).

Regarding claim 11, Claydon et al. discloses the claimed invention but does not specifically disclose wherein the at least another reflecting surface has a moveable grating structure associated therewith which is responsive to said signal for imparting modulation to the optical beam that is retro-reflected from the retro-reflecting structure. Ibsen et al. discloses wherein the at least another reflecting surface has a moveable grating structure (214 and 16) associated therewith which is responsive to said signal for imparting modulation to the optical beam that is retro-reflected from the retro-reflecting structure (col. 7, lines 17-24 and col. 14, lines 53-55). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Claydon et al. with the grating structure of Ibsen et al. for the purpose of dispersing light (col. 7, lines 17-24).

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Regarding claims 23 and 25, Claydon et al. discloses, in figure 14, an optical retro-reflective apparatus with modulation capability, wherein the retro-reflecting structure includes a least a pair of reflective surfaces (310, 312, and 314) including at least one optical element which is moved less than a wavelength of the optical beam in order to modulate the retro-reflected beam (section 0040).

Regarding claims 24 and 26, Claydon et al. discloses, in figure 14, an optical retro-reflective apparatus with modulation capability, wherein the pair of reflective surfaces (310, 312, and 314) are arranged in either a cat's eye or a corner cube configuration (306) (section 0041).

### *Response to Arguments*

3. Applicant's arguments with respect to claims 1, 2, 5-7, 9-11, and 22-26 have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandi N. Thomas whose telephone number is 571-272-2341.

The examiner can normally be reached on 7- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

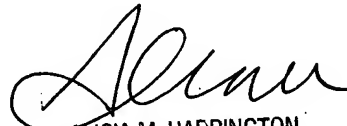


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BNT

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ALICIA M. HARRINGTON  
PRIMARY EXAMINER